# DISASTER DEBRIS MANAGEMENT PLANNING TOOL KIT FOR NEW JERSEY MUNICIPALITIES

November 2013



#### **EXECUTIVE SUMMARY**

On October 29, 2012, New Jersey experienced a storm of epic proportions, "Superstorm Sandy", resulting in severe flooding and downed trees that generated over 8 million cubic yards of debris across the 9 hardest hit counties in only one day.

A key lesson learned from Superstorm Sandy is that immediate response to debris collection and disposal is essential to a community's swift recovery from a disaster. The Department of Environmental Protection (Department) developed this guidance document to assist municipal officials in developing effective emergency debris management plans to aid in their recovery from events that generate substantial volumes of debris.

The Department strongly urges all municipal officials to conduct pre-disaster planning and prepare emergency debris management plans, which should be reviewed and updated annually. Municipal Emergency Debris Management Plans should be coordinated with county solid waste officials and the county Office of Emergency Management. Municipalities should also consider sharing these plans with adjacent municipalities and enter into shared service agreements wherever appropriate to ensure adequate staffing, equipment, and services during the disaster and immediately afterwards. The Department is working with the Department of Treasury to create stand-by contracts for debris management in future emergency situations. Municipalities should also consider either entering into stand-by emergency debris removal contracts or using the State's disaster debris contract vendors, once in place, as part of their pre-disaster planning process.

Once a disaster strikes that generates significant volumes of debris, the Department recommends the following top five (5) actions to address debris removal:

- 1. Assess the type (e.g., vegetative and non-vegetative debris) and extent of the debris generated, as well as the need for Temporary Debris Management Areas (TDMAs). Contact the Department to activate pre-approved TDMAs, if needed.
- 2. Implement debris removal activities using either stand-by emergency debris removal contracts, the State's disaster debris contract vendors and/or public works personnel. Contact the County Office of Emergency Management's (OEM) Debris Management Coordinator if local capabilities are overwhelmed.
- 3. Coordinate support from county and State agencies to reopen road networks.
- 4. Communicate with residents and businesses to ensure public awareness and cooperation with debris removal efforts.
- 5. For Federal Emergency Management Agency (FEMA) reimbursement purposes, monitor debris removal activities and maintain careful and detailed records of municipal personnel activities; the amount of debris transported and disposed of; and the location and costs of transport and disposal.

#### INTRODUCTION AND PURPOSE

After Superstorm Sandy struck, the Department of Environmental Protection (Department) noted that municipalities with Emergency Debris Management Plans already in place cleaned up faster and more efficiently than those without plans.

The Department has prepared this Disaster Debris Management Planning Tool Kit (Tool Kit) to assist municipalities in planning for the next disaster. The Tool Kit includes the Department's Emergency Debris Planning Guidance Document; the Department's Speed Up Your Cleanup handout and Garbage Collection Delay Fact Sheet; guidance on estimating the acreage needed to temporarily stage collected debris; frequently asked questions (FAQs) regarding storing debris in a TDMA; guidance on perimeter controls for stormwater management; and a request form for obtaining a pre-approval for TDMAs.

In addition to the information provided in this Tool Kit, the Federal Emergency Management Agency (FEMA) has numerous debris removal guidance documents on their website at <a href="http://www.fema.gov/government/grant/pa/debris\_main.shtm">http://www.fema.gov/government/grant/pa/debris\_main.shtm</a>.

If you have any questions on the information contained in this Tool Kit or about debris management, please contact the Department's Solid and Hazardous Waste Management Program (SHWMP) at (609) 633-1418.

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#### SECTION I. PREPARING FOR STORM DEBRIS CLEANUP

This Tool Kit has been developed to assist municipalities in preparing for any type of debris generating event, but as the past has shown us, storms are the most common debris generating event in New Jersey. Therefore, if you have not already taken steps to prepare for the next hurricane season, please consider taking the following short-term actions to ensure that your town is ready to manage hurricane debris.

1. Estimate how much debris you might expect from a storm. You might have been surprised at the volume of debris created in your town in 2011 by Hurricane Irene and Tropical Storm Lee and by Superstorm Sandy in 2012. To properly plan for a storm debris cleanup, it is important to develop a good estimate of how much debris (in cubic yards) may be generated by a severe storm. That will help you determine: (a) how much temporary debris storage capacity you will need (number and size of staging areas), (b) either staffing and equipment needs in your public works department or the structure of your stand-by debris contract, and (c) how much debris removal could cost.

The Department has prepared a model to assist municipalities in estimating potential debris generation amounts. Guidance on using this model is in Appendix 3 of this Tool Kit.

As an additional guide, the following table sets forth Superstorm Sandy debris volumes reported by several New Jersey towns:

MUNICIPALITY	COUNTY	Population (2010 Census)	NON- VEGETATIVE DEBRIS (IN CUBIC YARDS)	VEGETATIVE DEBRIS (IN CUBIC YARDS)
Bridgewater Township	Somerset	45,000	0	500,000
Toms River Township	Ocean	91,200	332,633	128,796
Moonachie Borough	Bergen	2,708	6,438	212

2. **Site and get Department pre-approval for one or more TDMAs**. The Department strongly encourages municipalities to act now to select areas that would be suitable for temporary staging of both construction and demolition storm debris and vegetative debris and to have those areas pre-approved by the Department. If you do not have room in your town for debris staging, this would be a good time to enter into a shared service agreement with one or more of your neighboring towns, or to work with your county solid waste planner to develop a regional TDMA.

Guidance on siting TDMAs is available in Section II of this Tool Kit and information on requesting pre-approval of TDMA sites is available in Appendix 4 and 6 of this Tool Kit.

Pre-approved TDMAs may only be utilized for the storage of debris after an Executive Order has been signed by the Governor declaring a state of emergency in the county in which the pre-approved TDMA is located <u>and</u> an Administrative Order has been signed by the Department's Commissioner allowing the relaxation of certain Solid Waste Rules.

Upon signature of the above mentioned documents, the Department will notify all municipalities with pre-approved TDMAs that their TDMA pre-approval may be activated if necessary. Municipalities may activate a pre-approved TDMA by notifying the Department via e-mail (solidwasteemergencies@dep.state.nj.us), fax (609-984-0565), or phone (609-292-9880). Since time is of the essence during an emergency event, there is no need to wait for acknowledgement of your notification from the Department prior to using a pre-approved TDMA. The Department will follow-up in a timely manner with each municipality that provides a notification.

- 3. **Identify/obtain debris removal and debris monitoring resources**. You have several options for debris removal and debris monitoring services after a disaster:
  - Utilize your municipal work force and municipal equipment.
  - Obtain competitively bid disaster debris removal and debris monitoring contracts through a pre-event stand-by contract to initiate response and recovery immediately following a disaster.
  - Utilize State of New Jersey cooperative purchasing agreements for disaster debris removal and debris monitoring. Check the New Jersey Department of the Treasury's website for applicable cooperative purchasing agreements:

http://www.state.nj.us/treasury/purchase/coop agency.shtml

Following Superstorm Sandy, some towns removed the most critical debris (e.g., debris blocking critical infrastructure) using municipal work forces, and then addressed the remaining debris using either their own competitively bid debris removal and monitoring contractor(s) or contractors available through State cooperative purchasing agreements. Some towns used contractors to remove the debris, but used their municipal workforces to monitor debris removal. Municipalities need to decide which method or combination of methods provides them with most efficient and cost-effective service.

4. **Educate your residents.** It is important to educate your residents and businesses on what they can do to minimize storm debris (e.g., bringing in outdoor furniture). Useful tips on minimizing debris can be found at http://www.ready.gov/hurricanes.

To expedite debris removal after a storm, your residents should also know what kind of debris to put at the curb and how to separate the debris for collection. Segregating debris by type and properly placing debris at the curb will greatly expedite debris removal. Appendix 1 of this Tool Kit is New Jersey's "Speed Up Your Cleanup" handout, which is designed to aid residents in separating the disaster debris for collection.

Appendix 2 of this Tool Kit is the Department's "Garbage Collection Delay Fact Sheet", which contains guidelines for residents to follow when waste collections are delayed.

#### SECTION II. EMERGENCY DEBRIS PLANNING GUIDANCE

Every municipality in New Jersey should have an Emergency Debris Management Plan, which can be part of its comprehensive Emergency Management Plan. The Department recommends that Emergency Debris Management Plans, at a minimum, address the following areas:

- General Debris Handling and Waste Prioritization
- Pre-Approved Temporary Staging Areas for Vegetative and Non-Vegetative Waste Debris
- Emergency Debris Removal & Transportation
- Communications and Information Resources for Local Officials, Residents & Businesses
- Personnel Training

When preparing or revising an Emergency Debris Management Plan, coordination with the county Office of Emergency Management (OEM), county household hazardous waste program, and county & local health departments is essential, and all parties should participate in the planning process.

#### A. General Debris Handling and Waste Prioritization

Depending on the severity of the disaster, it may not be possible to address the pickup and disposal of all debris in a timely manner <u>and</u> maintain regular garbage pickups. Every Emergency Debris Management Plan should, therefore, focus first on clearing the debris that hinders immediate lifesaving and emergency response actions. Once this debris is addressed, other debris can be removed, segregated, temporarily staged (if necessary), and then transported to a disposal or recycling facility. Emergency Debris Management Plans should consider the order in which debris will be collected and alert residents of any expected delays in garbage collection. See "Garbage Collection Delay Fact Sheet" in Appendix 2 of this Tool Kit for more information on handling collection delays.

Residents need to be advised that, unless otherwise instructed, all of New Jersey's waste and recycling regulations remain in effect during a disaster, and that their waste materials must be separated by type to facilitate prompt removal. It is especially important to properly separate out and bag putrescible materials (for example, food wastes and other waste that cause odors and/or attract insects, rodents and other animals) so that they may be picked up on a priority basis. Additionally, household hazardous waste (i.e., chemicals, used oil, etc.) and e-waste (i.e., TVs, computers, and monitors) should be separated from other waste debris so that they may be handled in an environmentally safe manner and properly disposed of or recycled. Separated debris should be placed along the right-of-way (the area between the sidewalk and the roadway)

and should not be placed in the road, near downed wires, or in areas prone to flooding. In addition, debris placed for collection should not block mailboxes, electric and water meters, fire hydrants, or storm drains. Residents should also be made aware that during the debris removal process they may experience increased traffic and noise. See "Speed Up Your Cleanup" in Appendix 1 of this Tool Kit for more information on separating disaster debris for collection.

Waste separation at the TDMA is important to minimize odors, and rodent or other vector problems, and to protect workers who may come in contact with waste materials. Recycleable materials, such as tree branches, metals and white goods (i.e., refrigerators, washers, dryers, etc.), should be separated from those that must be disposed of as solid waste. This segregation helps facilitate the flow of these materials to recycling facilities, and reduces the burden on, and costs of, solid waste disposal operations. In addition, household hazardous waste (HHW) and e-waste should be stored separately in the TDMA to facilitate their proper handling and disposal.

#### **B.** Siting Temporary Debris Management Areas (TDMAs)

Municipalities should identify, in advance of an emergency, appropriate TDMA locations that can be used to temporarily stage and/or process debris that cannot be directly transported to a disposal or recycling facility. For towns with no appropriate areas to site a TDMA, it is essential to identify appropriate regional TDMAs that can be used and enter into an agreement with the appropriate parties for its use before an emergent situation arises. A shared service agreement may be utilized for setting up regional TDMAs with neighboring towns.

The Department has a pre-approval process to assist municipalities in selecting appropriate sites in advance of emergencies, which is explained in the next section, "Obtaining Pre-Approval of Temporary Debris Management Areas." TDMAs require an approval from the Department to operate. Identification of pre-approved TDMAs should be appended to both the municipal and county OEM planning documents for reference. This will allow post-emergency/recovery cleanup efforts to begin early and proceed in an efficient manner.

TDMAs should only be located at sites which can be secured, and should not be located within a flood hazard or other environmentally sensitive area, including a historic/archeological site. In siting TDMAs, towns should also consider the following:

- 1. <u>Sizing the TDMA</u>: TDMAs should be large enough to accommodate debris from events of various magnitudes. A guide to estimating the required size of a TDMA is available in Appendix 3 of this Tool Kit.
- 2. <u>Location of the TDMA</u>: Avoid choosing sites near residences, schools, and hospitals. Local tolerance of impacts from noise, dust, and traffic significantly diminishes over time.

- 3. <u>Cost of the TDMA location</u>: Use public land first to avoid costly leases. Use private land only if public sites are unavailable. A valid lease agreement is required by the Department for TDMAs located on private property. The lease agreement should have provisions for returning the site to original conditions, documentation of the original conditions, and any insurance requirements of the property owner.
- 4. <u>Access to the TDMA</u>: Look for sites with good ingress/egress to accommodate heavy truck traffic and that have configurations that will allow for an efficient layout.
- Attributes of the TDMA location: Putrescible solid waste debris, white goods, HHW, and e-waste <u>must</u> be stored on a paved area or in roll-off containers. The entire debris staging area does not have to be paved, but the areas for staging/storing these types of solid and hazardous waste debris must be paved. Vegetative debris, on the other hand, should be stored on a pervious (unpaved) surface to minimize stormwater runoff, unless otherwise approved by the Department. Masonry debris (concrete, brick, and block) and construction and demolition debris may be stored either on a pervious (unpaved) or an impervious (paved) surface. Consider siting a TDMA on a closed municipal landfill, if available. Please note operations on closed landfills may require additional approvals from the Department's Bureau of Landfills & Hazardous Waste Permitting.

Finally, municipalities should conduct a baseline environmental survey before debris operations begin so the TDMA can be returned to those conditions at the conclusion of the debris operations. The baseline environmental survey should document physical features and conditions existing at the site prior to use as a TDMA. Digital photos can be helpful and are recommended. If the property is not owned by the municipality, the Department recommends performing environmental sampling of the soil and any on-site water prior to use to protect against future contamination complaints.

#### C. Obtaining Pre-Approval of Temporary Debris Management Areas (TDMAs)

The Department recommends seeking a pre-approval for TDMAs in advance of an emergency event. To obtain pre-approval, municipalities need to complete and submit the "Temporary Debris Management Area (TDMA) Pre-Approval Request Form" included in Appendix 6 of this Tool Kit, along with the additional required approvals and attachments outlined on the form. Information on completing the TDMA Pre-Approval Request Form can be found in the Frequently Asked Questions document located in Appendix 4 of this Tool Kit. The TDMA Pre-Approval Request Form requires the following information:

- Location of the site, including street address, block and lot numbers, and a description of the normal use of the site.

- Contact information, including emergency contact information, for the individual responsible for the TDMA and for the person filling out the TDMA Pre-Approval Request Form (if different).
- Certification that the areas used to stage/store putrescible solid waste debris, white goods, household hazardous waste, and e-waste are paved and areas used for staging vegetative debris are not paved. Masonry debris and construction and demolition debris can be stored in either paved or unpaved areas.
- Certification that the TDMA is secured and not located within a flood hazard or other environmentally sensitive area. Staging areas can be located within a Pinelands Management Area or Highlands Preservation Area with prior approval from the Pinelands Commission or Highlands Council. The Department will coordinate obtaining these approvals on behalf of the municipality.
- Additional approvals from the Department's State Historic Preservation Office, the Division of Fish and Wildlife (endangered species), and Land Use Regulation (wetlands) may also be required. However, the Department will coordinate obtaining any internal approvals needed on behalf of the municipality. However, the municipality may need to provide additional information to obtain these approvals.
- Documentation of endorsement by the county Office of Emergency Management.
- Documentation of endorsement from the local fire official. If a municipality does not have a local fire official then an approval must be obtained from either the County Fire Official or the State Fire Marshal within the Division of Fire Safety at the Department of Community Affairs (609-633-6106).
- Provide a site plan identifying the dimensions and locations of each proposed debris stockpile area within a TDMA, including the anticipated maximum height and volume of each stockpile. Vegetative stockpiles are limited to 150' x 250' x 25', and adequate spacing for emergency equipment must be maintained between stockpiles.
- A description of the processing activities that will be conducted at this site. Processing of vegetative debris (i.e., grinding and shredding) is permitted at TDMAs provided all processing equipment has a valid Air Pollution Control Permit and the municipality or county has a dust management plan containing measures that will be implemented if dust is generated during processing. Open burning of vegetative debris is prohibited in New Jersey. Non-vegetative debris may **not** be ground for size reduction. Removal and separation of white goods, e-waste, and HHW is recommended. Removal and separation of other waste types, such as concrete, wood, metals, etc., must be approved by the Department on a case-by-case basis. Removal of refrigerants from white goods is allowed at TDMAs, in accordance with applicable regulations.

- A description of the stormwater control measures that will be implemented at the site, such as containerizing certain wastes, covering non-containerized wastes, and containment and perimeter controls (i.e. sediment fencing, hay bales, absorbent booms, etc.) for the entire site. Stormwater controls are required at all TDMAs. Appendix 5 of this Tool Kit contains information on controlling stormwater at TDMAs.
- A deed indicating ownership of the property by the entity requesting the pre-approval. For properties not owned by the municipality, documentation of an agreement with the property owner for use of the property (i.e. a lease agreement) must be submitted.

The completed TDMA Pre-Approval Request Form and the required approvals may be emailed to solidwasteemergencies@dep.state.nj.us or faxed to (609) 984-0565.

As stated in Section I, use of a pre-approved TDMA can only occur during a governor declared state of emergency. The Department will notify all municipalities with pre-approved TDMAs that their TDMA pre-approval may be activated if necessary.

Due to the nature of putrescible solid waste, pre-approved TDMAs used to store this type of waste may only be operated for an initial period of 7 days. Municipalities may ask the Department to extent this operational time, if needed, prior to the expiration of the initial 7 day pre-approval.

TDMAs for vegetative debris, white goods, masonry debris, construction and demolition debris, e-waste, and household hazardous waste may be operated under a pre-approval for a period of up to 60 days. At the end of the 60-day period, all debris must have been removed to an appropriate recycling or disposal facility. If additional time is required, approval from the Department should be obtained prior to the expiration of the 60-day pre-approved period.

If a municipality does not obtain pre-approval of a TDMA and needs to temporarily manage debris subsequent to an emergency event, the TDMA Pre-Approval Request Form must be submitted to the Department and written approval obtained <u>prior</u> to the TDMA being utilized. Debris should not be managed at a site without Departmental approval.

#### D. Debris Removal, Monitoring, and Transportation Contracts

A disaster that generates significant quantities of debris requires significant transportation equipment and/or debris removal and monitoring services to manage the debris. Municipalities should inventory the government vehicles that can be put into service to assist in debris removal and disposal. Additionally, municipalities should consider having stand-by contracts with emergency debris contractors for collection, removal and/or monitoring services to ensure that such services will be available. The stand-by contracts should be reviewed regularly and revised

if necessary. Contracts covering waste transportation should only be made with companies that are A-901 licensed solid waste transporters, per N.J.S.A. 13:1E-126 et seq. and its implementing regulations at N.J.A.C. 7:26-16. This is not required for contracts for vegetative debris transport, unless the vegetative debris is transported to a solid waste facility. The Department maintains a list of licensed solid waste transporters that is available on the Licensing and Registration web site at <a href="http://www.nj.gov/dep/dshw/hwr/regislic/lru.htm">http://www.nj.gov/dep/dshw/hwr/regislic/lru.htm</a>. Choose the report titled "Report - Registered Solid Waste Transporters and Capabilities" from the drop-down listing of available resources at the bottom of the web page.

Lastly, it is important for you to know if your contractor is also obligated to assist other municipalities. This will help determine if the contractor has the ability to respond to all calls for assistance during an emergency, especially for emergency events that are regional in nature.

#### E. Communications and Information Resources

Municipal Emergency Debris Management Plans should address how communication between all levels of government and emergency responders will be handled and where additional information can be obtained.

It is especially important to consider how information will be shared with residents during the initial stage of debris response. Such communication is necessary to alert residents of possible delays in garbage collection and the need to separating debris and properly place it in the correct location (curbside vs. right of way) for prompt collection.

SHWMP maintains an e-mail account for correspondence regarding emergency events. Any correspondence with SHWMP during an emergency event can be conducted via that e-mail account at <a href="mailto:solidwasteemergencies@dep.state.nj.us">solidwasteemergencies@dep.state.nj.us</a>. Information related to an emergency event will be posted on the Department's web page at <a href="www.state.nj.us/dep">www.state.nj.us/dep</a>. All official correspondence from the Department concerning relaxation of any of New Jersey's Solid Waste Rules during an emergency event will be sent from the above e-mail address.

The DEP Hotline, 1-888-WARNDEP, should continue to be used to report any spills or other emergencies.

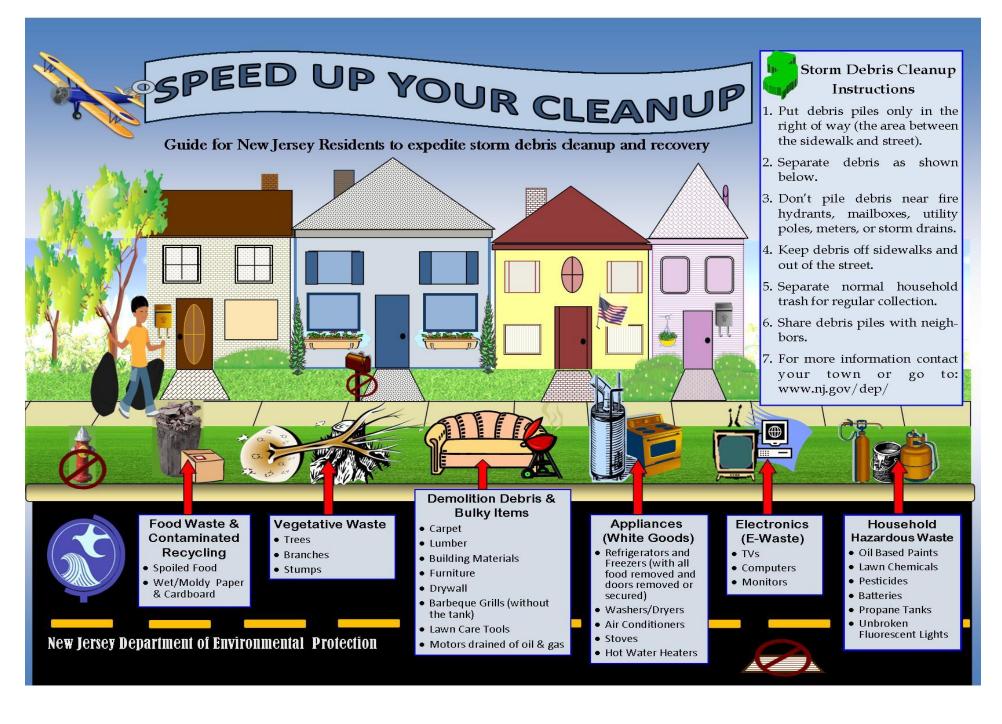
#### F. Personnel Training

All personnel conducting debris operations should be trained, at a minimum, on items such as identification of hazards and proper use of personal protective equipment. Additional training specific to job duties should be conducted to ensure the health and safety of the staff working at the site. Personnel should also be trained in identifying the different solid waste types, such as HHW and e-waste, to ensure all wastes are managed properly.

#### G. Recordkeeping

Records of the amount of debris collected from the right of way, received at a TDMA, processed at the TDMA (for vegetative debris), and transported to a final destination facility must be maintained and the information provided to the Department on a regular basis while the TDMA is in operation. Additional information on recordkeeping and reporting requirements will be provided in the future.

# APPENDIX 1 SPEED UP YOUR CLEANUP HANDOUT



# APPENDIX 2 GARBAGE COLLECTION DELAY FACT SHEET

#### GARBAGE COLLECTION DELAY FACT SHEET

#### **DELAY IN REFUSE COLLECTION**

Citizen cooperation in using alternatives to traditional garbage disposal will minimize problems resulting from a delay of waste collection services in the event of a natural or man-made disaster or a labor strike.

The actions listed below were prepared by environmental and health personnel to assist you in minimizing the adverse effects of a disruption of waste collection at your homes and in your communities.

1.	Limit the amount of waste	•	Avoid the use of disposable products such as paper or plastic plates, cups or disposable diapers.
	produced:	•	Reuse products such as plastic containers, jars and aluminum foil.
		•	Compost vegetative and yard wastes if space permits.
		•	Delay any major household cleanups such as backyard cleanup, tree pruning or disposal of old furniture.
2.	Separate and store food wastes	•	Drain excess garbage moisture. Pour fats, drippings and grease into glass jars and seal with a
	and other wet garbage:		screw on lid.
		•	Put food waste, disposable diapers and other wet waste into double plastic bags.
		•	Add a capful of ammonia to waste to reduce odor which will attract animals and other vermin.
		•	Secure trash bag tightly and store in a cool place.
3.	Separate and store recyclable	•	Rinse bottles and plastic containers.
	materials:	•	Rinse and crush aluminum and tin cans, trays and containers.
		•	Bundle cardboard, paper, and magazines.
		•	Store recyclable materials indoors, out of reach of children, and away from combustible materials.
4.	Separate dry, non-recyclable	•	Store non-recyclable paper, containers, packaging and other dry waste indoors and away from
	waste:		combustible materials.
5.	Separate hazardous household	•	Separate fluorescent lights, paints and thinners, insecticides and herbicides and store out of reach
	waste:		of children. Hold until county household hazardous waste collection day.

# APPENDIX 3 GUIDANCE FOR DETERMINING ACREAGE NEEDED FOR A TDMA

# GUIDANCE FOR DETERMINING ACREAGE NEEDED FOR TEMPORARY DEBRIS MANAGEMENT AREAS

The quantity and type of debris that may be generated by an emergency event varies based upon the magnitude and type of the event, which can make planning for the management of that debris difficult. However, the Department is providing the following guidance to assist municipalities when evaluating potential TDMA locations and sizes.

Note: This Guidance is based significantly upon the U.S. Army Corps of Engineers (USACE) "APPENDIX A, USACE HURRICANE DEBRIS ESTIMATING MODEL" available at:

http://dps.sd.gov/emergency\_services/emergency\_management/images/dmgappa.pdf

Qualifiers: The estimated debris quantities calculated by the model have a predicted accuracy of  $\pm$  30%. The USACE formula was developed for use immediately prior to a hurricane event. For the purpose of pre-planning, the Department recommends assuming the mid-range for the hurricane category (e.g., 26 cubic yards) and medium to heavy for the storm precipitation multiplier (value of 1.3). The assumption of 3 persons per household is used in this guidance. While this guidance is based upon a hurricane as the debris generating event, the result can be used as a guide for other possible debris generating events, such as floods, building collapses, etc.

#### STEP 1—ESTIMATE QUANTITY OF DEBRIS

Calculate the amount of debris which may be generated by an emergency event based on the number of households and businesses in the community as well as an estimate of vegetative cover. The resulting quantity of debris (Q) will be used in the calculation in Step 2.

#### Formula:

Q = H(C)(V)(B)(S)

**Q** is the quantity of debris in cubic yards.

**H** is the <u>Population in the jurisdiction divided by 3</u> to determine the number of households. For example, a municipality with a population of 1200 would have an H of 400.

C is the storm category factor in cubic yards. The Department recommends using 26 cubic yards.

V is the vegetative cover multiplier. The Department recommends using the table below for determining vegetative cover. For our municipality example of 1200 people, V = 1.1.

**B** is the commercial/business/industrial density multiplier. The Department recommends using the table below for determining Business/Commercial density. For our municipality example of 1200 people we estimate a light business/commercial multiplier of 1.0.

**S** is the storm precipitation characteristic multiplier. The Department recommends using 1.3.

Vegetative Cover	Multiplier
<b>Population Density</b>	Vegetative Multiplier
Urban;	1.1
> 3500 people per sq. mile	
Suburban;	1.3
< 3500 and > 2000 people per sq. mile	
Rural; < 2000 people per sq. mile	1.5

Business/Commerci	al Density Multiplier
Business/Commercial Use	Business/Commercial Multiplier
Heavy	1.3
Medium	1.2
Light	1.0

For our municipality example of 1200 people, Q = 14,872 cubic yards.

#### STEP 2—CALCULATE ACREAGE NEEDED FOR A TDMA

Using the debris generation quantity (Q) calculated in Step 1, determine the acreage required for storage at a TDMA. The maximum acreage required for the storage of <u>all</u> debris is determined by dividing the debris generation quantity (Q) by the number of cubic yards of debris which may be stored per acre and using a multiplier to account for the roadways within the site and the buffers around the site. The Department recommends using 16,117 cubic yards per acre and a roadways/buffers multiplier of 1.66 (see Calculation of Qualifiers below for more details).

Due to New Jersey's substantial solid waste infrastructure and our recent experience with Superstorm Sandy, the Department recommends that local officials pre-plan TDMAs that are 10% of the maximum acreage required for the storage of all generated debris. This is based on the assumption that waste stored at a TDMA can be moved out relatively quickly to final disposal destinations.

#### Formula:

TDMA Acreage= Q divided by 16,117 cy/acre x 1.66 for roads/buffers x 0.10

For our municipality example of 1200 people, TDMA Acreage – 0.153

#### **Calculation of Qualifiers:**

Total volume per acre =  $4,840 \text{ sy/ac} \times 3.33 \text{ y} = 16,117 \text{ cubic yards per acre}$ 

Debris pile stack height of 10 feet = 3.33 yards (y)

1 acre (ac) = 4,840 square yards (sy)

Roadways/buffers multiplier = 1.66 Infrastructure Factor = 10% or 0.10

#### **IMPORTANT NOTES:**

The Department urges local jurisdictions that do not have sufficient TDMA capacity due to lack of available space to consider the use of a shared service agreement, authorized pursuant to N.J.S.A. 40A:65-1 et seq. The Agreement must specify services to be provided, including scope of performance, assignment of responsibilities, and procedures for payments. The Department also urges consideration of regional TDMAs. Local officials should coordinate selection of TDMAs with their County Office of Emergency Management and County Solid Waste Planning office.

### **APPENDIX 4**

# FREQUENTLY ASKED QUESTIONS ON THE APPROVAL AND OPERATION OF A TDMA

# FREQUENTLY ASKED QUESTIONS (FAQs) ON THE APPROVAL AND OPERATION OF A TEMPORARY DEBRIS MANAGEMENT AREA

#### **General Questions**

#### 1. What is a Temporary Debris Management Area or TDMA?

A TDMA is a site used to temporarily store debris which has been collected from the right of way after an emergency event, such as a flood, hurricane, Nor'easter, or terrorist attack. Use of a TDMA facilitates clearing of roads by providing an area where collected debris can be consolidated, sorted and processed prior to transportation to a solid or recycling waste facility. TDMAs may only be operated with an approval from the Department during a declared state of emergency.

#### 2. What debris may be stored at a TDMA?

Debris generated after an emergency event that may be stored at a TDMA includes:

- vegetative waste (e.g., tree limbs, shrubs, etc.);
- municipal waste (putrescible and non-putrescible);
- construction and demolition (C&D) debris (e.g., wallboard, plywood, etc.);
- household hazardous waste (HHW) (e.g., oil, paint, etc.);
- white goods (e.g., refrigerators, washers, dryers, etc.); and,
- electronic waste (e-waste) (e.g., TVs, computers, etc.).

#### 3. Why is a TDMA approval required?

The storage of solid waste is a regulated activity in New Jersey. Any site where solid waste is stored (other than the point of generation) is regulated as a solid waste facility, unless the activity is specifically exempted from the Solid Waste Rules. There are no exemptions from the regulations for the storage of debris. However, during a declared state of emergency the Department may allow the waiver of certain Solid Waste Rules. In those instances, a TDMA may operate without being regulated as a solid waste facility, provided an approval from the Department is obtained.

#### 4. Who can apply for a TDMA approval?

Only government entities (state, county, municipal) may apply for and receive an approval to operate a TDMA.

#### 5. Why can't private businesses obtain a TDMA approval?

The purpose of a TDMA is to aid a government entity's quick response to an emergent crisis within the community and is not intended as a profit making enterprise. Therefore, the

Department will not allow private businesses to establish TDMAs. However, private entities may be hired by a government entity to manage or operate an approved TDMA.

# 6. Is there a fee (annual, monitoring, application fee, etc.) related to obtaining a TDMA approval?

The Department does not charge fees for TDMA approvals or inspections.

#### 7. Once I have a pre-approval can I use the TDMA whenever I need to?

No, use of a TDMA can only occur when both an Executive Order has been signed by the Governor declaring a state of emergency in the county in which the TDMA is located <u>AND</u> an Administrative Order has been signed by the Department's Commissioner allowing the relaxation of certain Solid Waste Rules. Without these documents, use of a TDMA constitutes an illegal solid waste disposal facility under the Solid Waste Rules and subjects the county or municipality to appropriate enforcement action.

#### 8. What if the Governor doesn't sign a state of emergency?

If there is a need for the use of a TDMA when a state of emergency has not been declared, the Department may use its Enforcement Discretion to allow the use of pre-approved TDMAs for localized debris events, such as a tornado, isolated storm, or building collapse. However, this will be decided on a case by case basis depending on the scope of the debris generating event. Municipalities wishing to activate their pre-approved TDMA outside of a Governor declared state of emergency must request and receive written approval from the Department prior to commencement of storage activities at its TDMA. Requests should be submitted to the Department via an e-mail to solidwasteemergencies@dep.state.nj.us, a fax to (609) 984-0565, or by a phone call to (609) 633-1418.

#### 9. How do I activate my TDMA?

Upon signature of the above mentioned Executive Order and Administrative Order, municipalities located within an area covered by the Executive Order with pre-approved TDMAs may activate their TDMA pre-approval by notifying the Department via an e-mail to solidwasteemergencies@dep.state.nj.us, a fax to (609) 984-0565, or by a phone call to (609) 633-1418. Since time is of the essence during an emergency event, there is no need to wait for acknowledgement of your notification from the Department prior to using a pre-approved TDMA. The Department will follow-up in a timely manner with each municipality that provides a notification.

#### 10. How do I obtain a pre-approval for a TDMA?

Municipalities may request a TDMA pre-approval by submitting the "Temporary Debris Management Area (TDMA) Pre-approval Request Form" along with all required documentation attached. The completed form should be e-mailed to solidwasteemergencies@dep.state.nj.us.

The "Temporary Debris Management Area (TDMA) Pre-Approval Request Form" is available in Appendix 6 of this Tool Kit.

#### 11. How long can I operate a pre-approved TDMA?

Pre-approved TDMAs may be operated initially for a period of 7 days for putrescible waste debris and 60 days for other types of debris. The Department may approve operation extensions beyond the initial time periods depending on the scope of the debris generating event.

#### 12. My TDMA approval has expired. Can I get an extension?

Extensions should be requested at least 3 days prior to the expiration date of an approval for putrescible waste debris and at least 14 days prior to the expiration date of an approval for all other types of debris. Requests for extensions should be submitted via an e-mail to solidwasteemergencies@dep.state.nj.us and must provide information on why the extension is required and indicate the amount of additional time requested. A written response to the extension request will be issued by the Department.

#### Siting a TDMA

#### 13. How do I determine how large of a TDMA I need?

It is difficult to determine the size and capacity of a TDMA prior to an emergency event, since it's primarily dependent on the scope of the event. However, the Department has developed guidance to assist municipalities in making a determination for pre-planning purposes. The guidance is in Appendix 3 of this Tool Kit.

#### 14. What if there are no suitable sites in my municipality for a TDMA?

Municipalities are encouraged to work with counties to set up regional TDMAs for the use of multiple municipalities. In addition, municipalities can set up regional TDMAs through shared service agreements with neighboring municipalities. Regional TDMAs can reduce costs associated with debris management. Municipalities that set up a regional TDMA through a shared service agreement do not have to be adjacent to one another.

#### **Operating a TDMA**

#### 15. What if I need to take in more debris than my TDMA approval allows?

Increases in the approved capacity of a TDMA may be requested by submitting a request via e-mail to <a href="mailto:solidwasteemergencies@dep.state.nj.us">solidwasteemergencies@dep.state.nj.us</a>. The Department will evaluate the location of and capacity of the site and the need for the expansion prior to approving any increases in capacity. The request must include an endorsement by the local fire official. A TDMA may not implement an increase in capacity until receiving written approval from the Department.

#### 16. What methods of processing are allowed at a TDMA?

Vegetative debris may be ground or shredded for size reduction at TDMAs provided all processing equipment has a valid Air Pollution Control Permit and the municipality or county has a dust management plan containing measures that would be implemented if dust is generated during processing. Vegetative debris may not be burned, except in a permitted solid waste resource recovery facility. Open burning of vegetative debris is prohibited in New Jersey.

Non-vegetative debris may not be ground for size reduction. Removal and separation of white goods, e-waste, and HHW is recommended. Removal and separation of other waste types must be approved by the Department on a case-by-case basis.

#### 17. Are "first grind" wood chips classified as unprocessed or processed material?

Vegetative debris can be processed by different types of equipment, each producing different types of end product. Units that merely shred the vegetative debris produce shredded wood that is generally too large to be used as a product. This is called a "first grind." In order to produce useable mulch the material must be ground a second time. "First grind" wood material is considered processed material if it is removed from the TDMA without additional processing. If the material is expected to be ground a second time, then the "first grind" chips are merely in an intermediate processing state and therefore are considered to be unprocessed material.

#### 18. Can we contract with a private contractor to run our TDMA?

A private contractor may be engaged to operate a TDMA, rather than the government entity using its own employees. The contractor can be limited to processing vegetative debris or may run the entire TDMA, including collection, storage, and disposal. If a contractor will be used to process vegetative debris, a copy of the contractor's air permit needs to be requested. Contractors must operate the TDMA in compliance with any Department approvals, rules and guidelines, as well as contract requirements. However, the TDMA approvals are issued to government entities only, and therefore the government entity is ultimately responsible for ensuring the site is operated in compliance with Department approvals, rules and guidelines.

#### 19. What are valid end-markets for debris stored in a TDMA?

Waste Type	End-Market
C&D and Bulky Waste	<ul> <li>NJ permitted solid waste facility (landfill or transfer station/material recovery facility)</li> <li>Out of state solid waste facility that is operating under an approval issued by that state's regulating entity.</li> </ul>
Household Hazardous Waste	<ul> <li>County-run household hazardous waste collection,</li> <li>Permitted hazardous waste facility</li> <li>Out of state facility operating under an</li> </ul>

	approval issued by that state's regulating entity.
White Goods	• Scrap processing facility as defined at N.J.S.A. 13:1E-99.12.
<b>Unprocessed Brush and Tree Parts</b>	<ul> <li>Approved Class B Recycling Center</li> <li>Out of state recycling center operating under an approval issued by that state's regulating entity.</li> </ul>
Wood Chips*	End uses where the chips are used as a product such as placement on park trails or as mulch.*

<sup>\*</sup>For additional wood chip end uses see Enforcement Alert 2012-21, "Wood Chip Management Guidance" available at www.nj.gov/dep/enforcement/advisories/2012-21.pdf.

#### 20. Are markers and/or signage required at a TDMA?

Yes, maximum stockpile dimensions should be clearly marked to ensure operators are aware of the maximum amount of debris that may be stockpiled at the location. In addition, while not required, directional signage is recommended to ensure truck drivers are aware of where to go on-site. This is especially important when utilizing outside contractors for debris removal rather than municipal or county personnel.

#### Reporting

#### 21. What do I do when the TDMA operations are completed?

A TDMA is considered "closed" when all material has been removed from the site (including processed wood chips). A close-out form must be completed and sent to the Department via e-mail to solidwasteemergencies@dep.state.nj.us or faxed to (609) 984-0565. Upon closure, the TDMA site must be restored to its original conditions. While the Department does not have regulations regarding closing and restoring a TDMA, FEMA has guidance on how to properly close a TDMA in their "Public Assistance Debris Management Guide" available on-line at http://www.fema.gov/government/grant/pa/debris\_main.shtm.

#### Filling out the TDMA Pre-Approval Request Form

#### 22. How do I calculate the volume of stockpiles?

Volume is calculated by multiplying the length of the stockpile in feet by the width in feet and the height in feet and then dividing by 27 to convert cubic feet into cubic yards. This result is multiplied by 0.50 (or divided in half) to account for the side slopes of the stockpile.

#### 23. What do the different types of debris mean?

Construction & Demolition (C&D) Debris – Waste building material and rubble resulting from an emergency debris generating event. The following materials may be found in construction and demolition debris: treated and untreated wood scrap; concrete, asphalt, bricks, blocks and other masonry; plaster and wallboard; roofing materials; corrugated cardboard and miscellaneous paper; ferrous and non-ferrous metal; non-asbestos building insulation; plastic scrap; dirt; carpets and padding; glass (window and door); and other miscellaneous materials.

**Bulky Solid Waste Debris** – Large items of solid waste which because of their size or weight cannot be handled by the traditional municipal waste process. Bulky solid waste debris includes, but is not limited to, appliances, furniture (couches, chairs, tables, bookshelves, etc.), and other large household goods.

**Household Hazardous Waste** (HHW) – Household items that contain hazardous chemicals such as automobile fluids (used waste oil, antifreeze, etc.), batteries, oil-based paints and stains, cleansers, photo chemicals, lawn-care chemicals, unidentified liquids, household cleaners, and pesticides. Latex paint is not household hazardous waste.

**Putrescible Solid Waste** – Household garbage, such as kitchen waste, that is subject to odors and may attract insects, rodents, or other vermin.

**E-waste** – A desktop or personal computer, computer monitor, portable computer, or television sold to a consumer.

**Vegetative Debris** – Source separated whole trees, tree trunks, tree parts, tree stumps, brush, and leaves (provided they are not composted).

#### 24. Does the site plan have to be prepared by a professional engineer (PE)?

The required site plan does not have to be prepared by a professional engineer. The site plan could be a site plan that was prepared by a PE but has been marked up to show where the TDMA and the stockpiles will be located or can simply be a print-out of an enlarged tax map clearly showing the site with the required information marked on the map.

#### 25. What needs to be on the site plan?

The site plan must show the unprocessed and processed stockpile locations, dimensions of the stockpiles (length, width, and height in feet), stormwater controls that will be implemented, site access and egress, traffic flow within the site, and security measures that will be implemented at the site (gate, fencing, etc.). In addition, photographs showing the existing conditions of the site must be provided.

#### 26. Are there additional approvals required?

Yes, approvals from the County Office of Emergency Management and the Local Fire Official are required and must be submitted with the TDMA Pre-Approval Request Form. Additional approvals from the Pineland's Commission, Highlands Council, the Department's State Historic Preservation Office, Stormwater Program, Endangered Species Program, and/or Freshwater Wetlands Program, may also be required. However the Department will coordinate obtaining these approvals on behalf of the municipality. The municipality may need to supply additional information in order for the Department to obtain these additional approvals.

#### 27. My municipality does not have a local fire official. Who do I get approval from?

If a municipality does not have a local fire official then approval must be obtained from either the County Fire Official or the State Fire Marshal within the Division of Fire Safety in the Department of Community Affairs (609-633-6106).

#### 28. Who can sign the TDMA Pre-Approval Request Form?

For municipalities, the form and certification may only be signed by either the mayor, public works supervisor, or the local OEM.

## **APPENDIX 5**

# STORMWATER MANAGEMENT CONTROLS REQUIRED AT A TDMA

# Stormwater Management Controls Required at Temporary Debris Management Areas (TDMAs)

#### **Perimeter Control**

Temporary debris management areas should have perimeter controls surrounding the site to prevent discharge of stormwater runoff. In addition, buffers should be provided between debris stockpiles and all property lines. Examples of perimeter controls are:

- Stormwater controls, such as curbs, berms, hay bales, silt fences, jersey barriers or setbacks, to prevent discharge of runoff into nearby water bodies or storm inlets.
- Windblown debris controls, such as slatted fencing, tarping or other forms of cover.
- Preventative siltation/spill measures for storm drain inlets, such as oil booms or filter fabric inlet protection.
- Preventative tracking measures, such as gravel, quarry blend, or rumble strips at exits

#### **Debris Containment**

The debris categories below also require a cover or a berm. Covers include tarps and fabric frame structure. Berms include sand bags, hay bales and curbing.

# Items to be placed in Dumpsters or other Storage Containers - cover and berm required

- Oil Tanks
- Infectious/Medical Waste
- Putrescible solid waste debris
- E-Waste

- Hazardous Household Products (Paints, Cleaning Supplies, Solvents, etc.)
- Hazardous Materials (any waste that is toxic, corrosive, reactive or ignitable)

# Items to be placed on Impervious Surfaces (parking lot, streets and concrete pads) – berm required

- Vehicles (including boats and RVs)
- White Goods (Appliances)

#### Items to be placed on Pervious Surfaces (grass, sand and dirt) - berms required

- Vegetative Waste
- Construction and Demolition Debris
- Bulky Waste

### **APPENDIX 6**

# TEMPORARY DEBRIS MANAGEMENT AREA (TDMA) PRE-APPROVAL REQUEST FORM



#### State of New Jersey

CHRIS CHRISTIE
Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION MAIL CODE 401-02C Solid & Hazardous Waste Management Program P.O. Box 420

BOB MARTIN
Commissioner

KIM GUADAGNO Lt. Governor Trenton, New Jersey 08625-0420
Telephone: (609) 292-9880 Telecopier: (609) 984-0565
<a href="http://www.state.nj.us/dep/dshw">http://www.state.nj.us/dep/dshw</a>

# TEMPORARY DEBRIS MANAGEMENT AREA (TDMA) PRE-APPROVAL REQUEST FORM

For information on completing this form please see "Frequently Asked Questions on Pre-Approval of TDMAs" and "Disaster Debris Planning Tool Kit for New Jersey Municipalities" or contact the Solid and Hazardous Waste Management Program at (609) 633-1418.

E-mail completed form with the required approvals to: <u>solidwasteemergencies@dep.state.nj.us</u> or fax the form to: (609) 984-0565.

Government Entity Requesting:	
Mailing Address:	
City:	Zip Code:
Primary Contact:	Title:
Office #:()Fax#:(	)
Cell #:()e-Mail:	
Cell #:() e-Mail:  . Location of TDMA (if debris management will submit a separate form for each site):	
. <b>Location of TDMA</b> (if debris management will	be conducted at multiple locations
. Location of TDMA (if debris management will submit a separate form for each site):	be conducted at multiple locations
<pre>. Location of TDMA (if debris management will submit a separate form for each site): Street/Intersection:</pre>	be conducted at multiple locations  Lot #

In or near wetlands?NOYES In a Highlands Preservation Area:NOYES	
In or near wetlands?NOYES  In a Highlands Preservation Area:NOYES	
<del></del>	
In a Pinelands Management Area: NO YES	
Describe measures to control dust emissions (i.e., water t	
nosing, paved road, truck tarping, etc.):	
Storage Area	
Storage Area	
Storage Area TYPE OF DEBRIS TO BE STORED:	
Storage Area  TYPE OF DEBRIS TO BE STORED:  CONSTRUCTION & DEMOLITION DEBRIS	
Storage Area  EYPE OF DEBRIS TO BE STORED:  CONSTRUCTION & DEMOLITION DEBRIS BULKY SOLID WASTE DEBRIS	
Storage Area  TYPE OF DEBRIS TO BE STORED:  CONSTRUCTION & DEMOLITION DEBRIS BULKY SOLID WASTE DEBRIS HOUSEHOLD HAZARDOUS WASTE*	
BULKY SOLID WASTE DEBRIS HOUSEHOLD HAZARDOUS WASTE*  PUTRESCIBLE SOLID WASTE*	

3.

Asph		<b></b> -	a Surface	•		
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Page 3 of 4

NOTE: Site plan does  $\underline{\mathtt{not}}$  have to be prepared by a professional engineer.

B. Photographs of the site showing existing conditions (Google Earth photos are not sufficient as they may be not be current.)
C. Endorsements from the following agencies must be attached:
County Office of Emergency Management
Local Fire Official
Note: The Department will coordinate obtaining approvals from the State Historic Preservation Office, Stormwater Program, Endangered Species Program, Freshwater Wetlands, Pinelands Commission (if applicable), and Highlands Council (if applicable). Additional information may be requested.
Certification by Mayor, Public Works Supervisor, or local OEM of entity requesting approval:  I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information and that submitting false information may be grounds for termination of any approval granted. I further certify that I have read and fully agree to the terms listed in the "New Jersey Department of Environmental Protection Disaster Debris Management Tool Kit for New Jersey Municipalities", that if I am storing putrescible solid waste, household hazardous waste, white goods, or e-waste the area must be paved, and that non-vegetative debris will not be processed.
Name (print)
Title (print)
Signature         Date://